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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,402	12/14/2001	Michael R. Brickey	83448AEK	1498

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EXAMINER	
WANG, GEORGE Y	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,402	BRICKEY ET AL.	
	Examiner	Art Unit	
	George Y. Wang	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-25* is/are pending in the application.

4a) Of the above claim(s) *23-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-7, 11-14, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Ouderkirk et al. (U.S. Patent No. 5,825,543, hereinafter "Ouderkirk").

3. As to claim 1, Ouderkirk discloses a light diffuser (col. 15, line 40) comprising a thermoplastic layer (col. 32, lines 62-63) containing thermoplastic polymeric material and microvoids (col. 16, lines 51-55) having substantially circular cross-section (fig. 3) in a plane perpendicular to the direction of light travel having a diffuse light transmission efficiency of at least 65% (col. 32, lines 39-41, 50-53) and a light transmission greater than 80% (col. 29, lines 8-9).

4. As per claim 2, Ouderkirk discloses the light diffuser as recited above where the different in refractive index between the thermoplastic polymeric material and the micrvoids is greater than 0.2 (col. 2, lines 66-67; col. 3, lines 1-2).

5. Regarding claims 3-4 and 6, Ouderkirk discloses the light diffuser as recited above are formed by organic mircospheres (col. 13, lines 12-14), are substantially free of scattering inorganic particles (col. 13, lines 21-22), and contain a gas (col. 16, lines 58-59).

6. As to claim 7, Ouderkirk discloses the light diffuser as recited above with thickness uniformity less than 0.10 micrometers (uniform skin layer, col. 15, lines 44-46).

7. Regarding claims 11-14, Ouderkirk discloses the light diffuser as recited above where the light transmission is greater than 87% (col. 29, lines 8-9) and where the microvoids have a major axis diameter to minor axis diameter ratio of 1.0 (col. 10, lines 41-43).

8. As per claims 19-20, Ouderkirk discloses the light diffuser as recited above where the thermoplastic layer comprises polyolefin polymer (col. 14, lines 10-14) and polyester polymer (col. 13, lines 21-22).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 5, 15-18 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Aylward et al. (U.S. Patent No. 6,017,686, hereinafter "Aylward").

11. Regarding claims 5 and 21-22, Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose microvoids containing cross-linked polymer beads having a particle size between 0.30 and 1.7 micrometers.

Aylward discloses a light diffuser (col. 3, lines 28-30) with microvoids containing cross-linked polymer beads (col. 5, lines 5-10, 44-45) having a particle size between 0.30 and 1.7 micrometers (col. 4, lines 43-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have microvoids containing cross-linked polymer beads having a

particle size between 0.30 and 1.7 micrometers since one would be motivated to provide a light diffuser with a recognized spectral transmission of at least 40% (col. 9, lines 17-18).

12. As to claims 15-18, Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm^2 and where the light diffuser has a thickness between 12.5 and 50 micrometers.

Aylward discloses a light diffuser (col. 3, lines 28-30) with microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm^2 (col. 4, lines 50-55) and where the light diffuser has a thickness between 12.5 and 50 micrometers (col. 4, lines 43-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have microvoids having an average volume between 12 and 18 cubic micrometers over an area of 1 cm^2 and where the light diffuser has a thickness between 12.5 and 50 micrometers since one would be motivated to provide a light diffuser with a recognized spectral transmission of at least 40% (col. 9, lines 17-18).

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Wu et al. (U.S. Patent No. 5,346,954, hereinafter "Wu").

Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose the elastic modulus of the light diffuser being greater than 500 MPa.

Wu discloses a light diffuser (col. 1, line 54) with an elastic modulus that is greater than 500 MPa (col. 11, lines 65-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a light diffuser with an elastic modulus that is greater than 500 MPa since one would be motivated to provide a light diffuser that does not crystallize under performance (col. 11, lines 57-59), which ultimately preserves and optimizes diffusion functionality.

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouderkirk in view of Yamamoto et al. (U.S. Patent No. 5,502,011, hereinafter "Yamamoto").

Ouderkirk discloses the light diffuser as recited above, however, the reference fails to specifically disclose the impact resistance of the light diffuser being greater than 0.6 Gpa.

Yamamoto discloses a light diffuser (col. 3, lines 28-30) with an impact resistance that is greater than 0.6 Gpa (col. 4, line 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a light diffuser with an impact resistance that is greater than 0.6 Gpa since one would be motivated to provide a ceramic having improved

mechanical properties (col. 2, lines 64-65), which ultimately preserves and optimizes diffusion functionality.

Response to Arguments

15. Applicant's arguments filed February 4, 2005 have been fully considered but they are not persuasive.

Applicant's Remarks contain several arguments. First, Applicant argues that Ouderkirk reference fails to specifically disclose a diffuser with microvoids having a substantially circular cross section in a plane perpendicular to the direction of light travel nor suggests a diffuse light transmission efficiency of at least 65%. In response, Ouderkirk clearly discloses microvoids with substantially circular cross sections. While Applicant argues that those depicted in Fig. 3 are not microvoids, but rather "immiscible discontinuous phase polymer material," Examiner asserts that such "discontinuous phase" material can be replaced by microvoids, as admitted by Applicant, to provide refractive differences (col. 2, line 57 – col. 3, line 8). Furthermore, Ouderkirk clearly teaches a diffuse light transmission efficiency of at least 65% (col. 32, lines 39-41, 50-53). Applciant argues that in Col. 32, lines 50-53, the reference recites "70% of light polarized orthogonal to a first polarization" is transmitted, thereby saying only "at least 35% total light is transmitted." However, Examiner disagrees. First, nowhere in the claims is "total" light transmission efficiency disclosed. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Second, even if it were construed as "total" transmission efficiency, Ouderkirk also teaches that the diffuser has "a total transmission of greater than about 70% for the second polarization state." Thus, even if Applicant is correct that 70% transmitted from the first state is actually 35% transmission efficiency, then it would be equally correct to say that another 35% is transmitted through the second polarization state. Therefore, Ouderkirk discloses a diffuser having "a diffuse light transmission efficiency of at least 65%.

Applicant also argues that the Ouderkirk reference fails to specifically disclose that the light diffuser exhibits a light transmission that is greater than 80%, and more specifically in dependent claim 11 which is greater than 87%. However, Examiner disagrees. First, nowhere is "total" light transmission recited in the claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Second, Ouderkirk clearly teaches a diffuser with transmission at 87.1% (col. 29, lines 8-9).

While Applicant further argues that the secondary references fail to remedy the allegedly aforementioned "deficiencies" and lack motivation and reasonable expectation of success, Examiner asserts that because the Ouderkirk reference clearly discloses these limitations singly, the independent claim is sufficiently rejected by the Ouderkirk reference. With regard to the dependent claims, Applicant's arguments are not persuasive because the Aylward reference is used for its teaching of polymer cross-linking beads, not transmission efficiency as Applicant argues. As stated above, the

Ouderkirk reference already teaches that limitation. The motivation asserted, therefore, is to provide a light diffuser with a recognized spectral transmission of at least 40% (col. 9, lines 17-18). While Applicant argues this is not in accordance with their invention, which requires more than 65%, Examiner notes that Aylward is discussing "spectral" transmission. As a result, in light Applicant's arguments, this is different from "total" transmission. Therefore, unless Applicant makes it clear what type of transmission is being compared, the reference is more than sufficient in its reading on the argued claims.

With regard to the combination with the Yamamoto reference, Applicant argues that the combination of this reference with that of the Ouderkirk reference "would not have a reasonable expectation of success." Applicant basis this on the fact that the Yamamoto reference teaches high sintering temperatures for which Ouderkirk's invention could not withstand. However, Applicant has failed to indicate or cite any teaching that supports this contention. Furthermore, the Yamamoto reference recites sintering temperature of 1650°C "or below." As a result, a temperature that is more suited to Ouderkirk's phases is not precluded by the teachings of Yamamoto.

As a result, Examiner holds to the validity of the references used and maintains rejection.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gw
April 28, 2005

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